

crispprd 1.0



Abstract

Grant Number: 1F31NR007837-01

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PI Title:

Project Title: Periaqueductal Gray in Pain Modulatory Circuitry

Abstract: *Despite recent advances in technology, achieving adequate pain management continues to challenge nurses and pain continues to be undertreated. The primary goal of this project is to increase understanding of the body's endogenous mechanisms of pain control, with anticipation of developing more efficacious treatment strategies. The specific aim of this proposal is to test the hypothesis that neurochemistry and neuronal activation within brainstem sites involved in descending modulation of nociception change over time following persistent inflammation and hyperalgesia and that the ventrolateral PAG (vlPAG) plays a key role in these changes. This hypothesis will be tested in a rat model of persistent inflammation. Two groups of rats, either with a chemical ablation of or an intact vlPAG, will be studied at three time points following inflammation; 0, 3, and 24 hours. It is anticipated that, using antibodies to neurochemicals and Fos protein, differences will be seen prior to and following inflammation. Moreover, the proposed experiments will enable the applicant to assess the role of the vlPAG in these changes. This study will provide the applicant with a variety of research techniques necessary to study endogenous pain mechanisms and will further the field in developing future treatments.*

Thesaurus Terms:

*brain /spinal pathway /tract, brain stem, chronic pain, hyperalgesia, inflammation, neural information processing, neuron, periaqueductal gray matter
analgesia, antibody, fos protein, gene expression, neural transmission, neurochemistry, neurotransmitter, neurotransmitter receptor, norepinephrine, pain threshold, serotonin, stimulus /response
behavior test, immunocytochemistry, laboratory rat, microinjection, predoctoral*

investigator, stereotaxic technique

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Fiscal Year: 2001

Department: ORAL SURGERY

Project Start: 01-SEP-2001

Project End:

ICD: NATIONAL INSTITUTE OF NURSING RESEARCH

IRG: NRRC

